Reseach Program Specialist III (GIS)

Task Statements

1	Identify new research needs and priorities to advance understanding of the relevant areas of study.
2	Review research articles and other documents developed by internal and external researchers to identify and apply information useful to current research and/or programs.
3	Propose and design research studies using quantitative research methodologies and techniques (e.g., survey, sampling, remote sensing) necessary to conduct a research project to address questions posed by various sources (e.g., upper management, legislative body).
4	Conduct research studies using quantitative research methodologies and techniques (e.g., survey, sampling, remote sensing) necessary to address questions posed by various sources (e.g., upper management, legislative body).
5	Develop procedures to obtain and validate data from existing sources (e.g., local, state and federal agencies, non-governmental groups) and ensure data is accessible within the organization.
6	Implement and monitor procedures to obtain and validate data from existing sources (e.g., local, state and federal agencies, non-governmental groups) and ensure data is accessible within the organization.
7	Design geographical studies to provide information for use in analyzing important policy, research and program evaluation questions.
8	Conduct geographical studies to provide information for use in analyzing important policy, research and program evaluation questions.
9	Analyze organizational requirements and implement appropriate Enterprise GIS technology to support the use of spatial data by departmental users and collaborators.
10	Develop web-based Geographic Information Systems to provide access to spatial data for use by various internal and external users.
11	Develop, test, and implement data standards to ensure consistency, reliability, and usability of spatial data.
12	Design, test and implement standard spatial databases utilizing database management techniques and spatial data principles (e.g., projection, topology) for use in research projects or in response to policy questions.
13	Identify and define appropriate geospatial data to perform analyses and support research.
14	Identify and define appropriate use of remote sensing technology (e.g., Lidar, aerial photography, satellite imagery) to capture appropriate geospatial data to perform analyses and support research.

15	Identify and define appropriate use of satellite (e.g., Global Positioning System, Global Navigation Satellite System [GLONASS]) and/or ground based positioning systems to capture appropriate geospatial data to perform analyses and support research.
16	Identify and define appropriate use of hand held and/or mobile Geographic Information Systems technology to capture appropriate geospatial data to perform analyses and support research.
17	Develop standard data collection procedures and analyze existing procedures to ensure accuracy, consistency, and completeness of data used in reports or research projects.
18	Research source documents (e.g., parcel maps, legal descriptions, permits, historical maps) to assess the accuracy and completeness of data prior to input.
19	Evaluate data sources to determine any limitations in terms of reliability or usability to conduct research projects or in response to policy questions.
20	Perform data quality validation checks to ensure integrity and accuracy of the data to conduct research projects or in response to policy questions.
21	Identify circumstances requiring complex spatial models, and identify appropriate spatial modeling techniques (e.g., network analysis, cost surfaces, 3D analysis) to address important policy, program evaluation, and other research questions.
22	Design complex spatial models using appropriate conceptual design tools (e.g., ModelBuilder, Visio) to address important policy, program evaluation, and other research questions.
23	Perform complex spatial analysis and modeling using various types of geospatial data and techniques to address important policy, program evaluation, and other research questions.
24	Identify circumstances requiring custom Geographic Information Systems (GIS) tools for data automation, spatial analysis, or web-based GIS.
25	Identify and evaluate custom Geographic Information Systems (GIS) tools from external sources to improve operational efficiency and enhance program capability.
26	Create detailed technical specifications for custom Geographic Information Systems (GIS) tools, for use in data automation, spatial analysis, or web-based GIS.
27	Create custom Geographic Information Systems (GIS) tools and/or web applications using appropriate programming languages (e.g., Python, Java, C++) for use in data automation, spatial analysis, or web-based GIS.
28	Create cartographic standards and guidelines for program implementation to ensure consistency and usability of map products.
29	Develop procedures to facilitate standardization of map products using cartographic tools (e.g., map templates, symbology representations or layer files, Basemaps) to provide accurate map products for display in research projects.

30	Create and modify maps using geographic information software and related technology, and the principles of cartography to display research results or in response to policy questions.
31	Provide critiques of map products from staff to ensure consistency, usability, and adherence to program standards.
32	Create documentation of geospatial datasets (metadata), including abstract, purpose, citations, process steps, and data quality assessment to ensure appropriate use.
33	Prepare and format data from various sources (e.g., spreadsheets, Global Positioning System, text files, databases) for import into Geographic Information Systems using various software (e.g., SPSS, Access, Excel, R).
34	Analyze the results of a Geographic Information Systems analysis using statistical software (e.g., Excel, SPSS, Access, R) to quantify important findings and determine their validity, quality, and significance.
35	Condense and summarize the results of a Geographic Information Systems analysis using software (e.g., spreadsheet, database, statistical) to effectively display important findings in appropriate formats (e.g., graphs, charts, tables).
36	Develop conclusions and make program and policy related recommendations based on Geographic Information Systems (GIS) analysis findings.
37	Provide advice, assistance, and general technical support regarding various topics (e.g., data requirements, study implications, evaluation objectives, benchmarks) to inform others (e.g., management, clients, other agencies).
38	Coordinate collaborative research activities between internal and external stakeholders to capture diverse viewpoints and expertise.
39	Oversee and review the final production of reports for the Department, Legislature, Governor's Office, and other stakeholders to ensure best use of geospatial technology to address relevant issues.
40	Organize and lead meetings to discuss information for program research and provide direction on Geographic Information Systems (GIS) projects.
41	Coordinate the work of others in planning, organizing, and conducting major studies.
42	Develop staff training programs to ensure effective use of geospatial technology.
43	Implement staff training programs using various methods to ensure effective use of geospatial technology.
44	Serve as a lead in a cooperative effort with departmental staff to develop and implement Geographic Information Systems (GIS) standards across the organization.
45	Serve as a lead in establishing and implementing a user group to share Geographic Information Systems (GIS) expertise within the organization.

46	Serve as lead program staff to communicate program needs within internal and/or external Geographic Information Systems (GIS) user groups.
47	Serve as lead staff to communicate departmental needs within multi-agency geospatial policy and standards groups.
48	Collaborate with Information Technology (IT) staff to develop and implement Enterprise Geographic Information Systems (GIS) technology to facilitate sharing of data throughout the organization.
49	Manage ad-hoc requests for data, maps, and/or analysis from internal and external requestors to resolve issues related to Geographic Information Systems (GIS).
50	Work with senior level staff to develop critical documents (e.g., Budget Change Proposals, Feasibility Study Reports, legislative analysis) related to program evaluation and policy analysis.
51	Promote Geographic Information Systems (GIS) technology and capabilities to facilitate executive sponsorship to address a broader range of uses within the department.
52	Utilize project management principles and tools to develop projects and/or contracts, create schedules, define deliverables, manage budgets, monitor progress, and assess final deliverables.
53	Write letters, memos, email and other correspondence using word processing and other software for the purpose of communicating and disseminating information.
54	Write project and/or executive summaries, and other more complex documents using word processing and other software (e.g., Word, PowerPoint, Excel) for various purposes (i.e., documenting program requirements, research findings or addressing policy issues).
55	Write concept papers to explain an issue or need for changes to existing processes, procedures, or methodology, including scope of proposed change, advantages/disadvantages of the proposed change, and/or budget issues.
56	Write research reports including literature review, study goals and objectives, study design and research methodology, data collection procedures, data analysis techniques, results, conclusions and recommendations for dissemination to requestors and other interested parties.
57	Write documents (e.g., white papers, issue briefs, journal articles, technical briefs, fact sheets) that summarize the background, methods, results, conclusions and recommendations for research, program development, and program evaluation projects.
58	Review and write critiques of research articles and other documents developed by internal and external researchers to provide feedback on the research methodology, geospatial and statistical techniques used, findings obtained, and conclusions reached in the study.

59	Develop and conduct presentations to non-technical audiences (e.g., management, legislative bodies, commissions) on geospatial topics and findings.
60	Develop and conduct informative presentations on a variety of topics (e.g., research studies, demonstration projects) at technical conferences and meetings.
61	Provide consultation to staff and clients as requested on geospatial issues (e.g., data collection, spatial analysis, sampling methods, cartographic approach) to ensure effective use of geospatial technology.
62	Meet with staff and/or clients to review data-gathering procedures to ensure proper implementation.
63	Collaborate with scientific subject matter experts (e.g., geologists, biologists, hydrologists, engineers) to coordinate geospatial data capture, design, and appropriate use.